

# AIRPORT HILL TANK STORMWATER

TOWN OF ST. JOHNSBURY, VERMONT



*Manifold for infiltration system*



*Infiltration chamber installation*

During the design phase of the Airport Hill Tank replacement project, Dufresne Group identified that the project would require a Stormwater Discharge Permit due to an expansion of the impervious surface. The project consisted of a new water storage tank and a 1,250 linear foot gravel access road.

Due to the topography of the site, soil conditions and space constraints, the initial concept for stormwater treatment was infiltration. Field testing resulted in infiltration rates of 103 to 593 inches per hour. The minimum rate of 103 inches per hour was used in the design calculations.

Runoff from the access road and tank are conveyed via stone swales and drain pipes to a grass channel, which provides treatment for the Water Quality Treatment Standard and the Groundwater Recharge Treatment Standard. A catch basin located at the end of the grass channel outlets to the infiltration chamber system, which was designed to provide treatment for the Overbank Flood Protection Standard. The catch basin contains a weir, which directs first flush runoff into three pretreatment rows. Once the pretreatment rows are filled, the weir allows excess runoff to enter the remaining seven treatment rows.

## KEY FEATURES:

- Steep topography at the site limited the space available for stormwater treatment.
- Infiltration system met AASHTO requirements for live load, allowing the tank access road to be installed on top of the chambers.
- Non-rooftop disconnect stormwater credit was used for the small area that could not be collected by the treatment system.